MAGLEV Contest 2003

Student Design Portfolio

INSTRUCTIONS

The steps in this Design Portfolio will help you complete your MAGLEV vehicle design. Writing down what you did or found in each step will help you and others learn from your work. It will also help the contest judges understand your design approach.

The design process begins with a **Problem Statement**. Here you should state exactly what your design is trying to accomplish. Next, under **Investigation**, list the questions you will have to answer to come up with a successful design. The **remaining steps take you through the rest of the design process**. As you complete your design, fill in your responses to each step. You may add tables, charts, drawings or anything else you think will help you and your readers understand what you did.

1) Contest Category you want to enter:

Wind power	☐
Self-propelled	☐
Electrified track	☐
Gravity	☐
Appearance "Scale"	☐
Appearance "Futuristic"	☐

* If you check Gravity or Appearance, please be sure your car is labeled with your name.

*** Please complete this Design Portfolio according to the instructions below.**
*** On the day of the contest, you must give your completed Design Portfolio to the track start judge when it is your turn to compete. Your portfolio will be returned to your teacher after the contest.**

2) Student Last Name

3) Student First Name

4) School

5) School address

6) Grade

7) Teacher name

8) Teacher e-mail address

9) **Problem Statement:**

a. On this page, in your own words, describe your vehicle design problem: Exactly what are you trying to accomplish?

b. Are there specifications or restrictions?

10) **Investigation:**

a. On this page, list questions, which must be answered to create a successful vehicle design. Where can you get information?

b. Can some answers be found by simple tests?

11) **Brainstorming for Solutions:** On this page, from you investigation, what kind of things do you think might work for your problem? (Sketching is great for creating ideas.)

12) **Alternatives:** On this page, of several different (alternative) ideas, which seems best to begin with? Why?

13) **Optimum Design:** On this page, Describe what you decided would be the best vehicle design to try first, and describe the result.

14) **Testing and Analysis:**

a. On this page, what did you do to find out how well your first design worked?

b. What problems did you uncover? Charts and graphs are very helpful.

15) **Final Design:**

a. On this page, what did you try (if anything) to improve your first design?

b. How well did this work?

16) **Evaluation:**

a. On this page, describe/sketch your final design.

b. For categories 1-4, indicate how you think it will perform, including your best guess on how long your vehicle will take to go down the track.

c. For category 5, indicate what you wanted the final design to show about MAGLEV, including information on scale model proportions for category 5a.

(Please note: You can attach extra pages but make sure to use the same numbering and headings in your design portfolio.)